

UNITED STATES DEPARTMENT OF AGRICULTURE,  
BUREAU OF ENTOMOLOGY,  
WASHINGTON, D. C.

FOREST ENTOMOLOGY. 19.

May 12, 1916.

Brief Information on  
HICKORY GALL INSECTS and THEIR CONTROL.

**Evidence of Infestation.**

In the spring when the leaves and twigs are forming on the hickory, they are frequently found more or less deformed by peculiar tumor-like growths of various shapes and sizes. These are caused by gall lice related to the grape phylloxera. When these galls occur in large numbers they disfigure the affected parts and attract attention, but this rarely affects the vitality of the tree. It is on account of the numerous inquiries that this Brief is prepared.

**Seasonal History and Habits.**

From early June of one year to early April of the next, or about 10 months of the year is passed by these insects in the egg stage located in cracks and crevices, old galls, etc., on the hickory tree, particularly on the upper part of it. Coincident with the bursting of the buds in the spring these eggs begin to hatch, and ultimately become the so-called "stem-mothers". These "stem mothers" settle on the young twigs, leaf stems, mirdibs or forming nuts and each of them starts the formation of a gall with an inner cavity. In about 20 days from the time the gall is started, the "stem mother" deposits large numbers of eggs from which (in about 20 days) a generation of winged, migrating females develop. By this time the gall begins to open, thus allowing the insects to escape and fly. These migrants in turn lay eggs on the trees and in about 10 days the young develop into wingless males and females and the mature female lays fertile eggs which remain on the tree until the following spring when the complicated life cycle is repeated.

**Natural Control.**

As a rule these insects have a number of insect enemies which keep them so reduced that the galls are not common enough on any one tree to attract attention or do any harm.

**Artificial Control.**

Under wild or forest conditions artificial control is entirely impracticable and unnecessary, but in the case of valued shade or nut-producing trees that are regularly infested by the galls, it may be desirable to spray the trees with kerosene emulsion (See accompanying Brief) at the time the buds are opening in the spring, which should kill the "stem mothers", and thus prevent the development of the galls.

A. D. HOPKINS,

Forest Entomologist.

